is attached outside said airtight damper to configure a friction plate.

3. (Amended) The damper assembly with a torque limiter according to claim 1, wherein said torque limiter is provided inside said airtight damper to form a friction plate.

4. (Amended) The damper assembly with a torque limiter according to claim 1, wherein said torque limiter is provided inside said airtight damper to form a conical ring.

REMARKS

Applicants respectfully request favorable reconsideration of this application, as amended.

The drawings objections have been addressed by separate Letter Proposing Drawing Changes. The specification has been amended to conform with the proposed revision of Fig. 4.

Claims 2-4 have been amended to overcome the rejection under 35 U.S.C. § 112, second paragraph.

Claims 1-4 were rejected under 35. U.S.C. § 102(b) as being anticipated by Kagiyama et al. (U.S. Patent 4,850,932).

Independent claim 1 has been amended to more clearly define the invention by reciting that the damper assembly has a single torque transmission path between an input axis and an output axis and that the friction torque limiter is in series with the airtight damper. It is believed that this amendment removes the basis for the rejection of the claims.

Applicants' invention relates to a damper assembly having a single torque transmission path. In order to protect the damper from excessive torque load, the damper assembly is provided with a torque limiter in series with the damper. For example, if excessive torque is applied by the engine, the friction coupling provided by the torque limiter will slip at a value of torque predetermined by the force exerted by the pressure spring 93, as discussed in the specification at page 7, lines 15-20.

The apparatus disclosed in the Kagiyama reference is essentially a device for absorbing changes in torque. In the Kagiyama device, rotating plates and associated frictional elements control rotational vibration.

However, the torque input member of the Kagiyama reference, comprising the drive plate 1 and associated elements, has two frictional couplings, a first coupling located near its outer periphery and a second coupling located inward of the first and relatively close to the axis of rotation. These couplings are provided to control rotational vibration. The drive plate assembly can undergo a rotational movement within the range of rotational vibration of the damper mechanism, and is provided with a parallel connection to the output shaft. That is, there are two parallel torque transmission paths in contrast to the single torque transmission path of Applicants' invention.

Furthermore, Applicants do not see disclosure in the Kagiyama reference of an airtight damper, as recited in Claim 1. Rather, the springs in the reference appear to be open to the surrounding environment.

Consequently, the apparatus defined in amended Claim 1 is not disclosed or suggested by the disclosures of the Kagiyama reference. Accordingly, a rejection under 35 U.S.C. § 102(b) or § 103 is not appropriate, and the Examiner is respectfully requested to withdraw the outstanding rejection.

With regard to Claim 2, Applicants respectfully observe that the description in the Kagiyama reference relating to a torque limiter is, at best, rather ambiguous. The element 13 is identified as a friction element (column 3, line 11), and as a torque limiter (column 3, line 18). The element 15 is identified as a driven disk arm (column 2, line 37, column 3, line 9). However, in Figure 2, the lead line from reference numeral 15 appears to indicate an otherwise undescribed element bolted to the inertial body 7. Furthermore, at column 3, lines 8-9, the torque transmission path is described a proceeding from disk arm 15 to plate 14—an element that is not identified in the drawings. In any case the elements 13 and 15, as shown in Figure 2 appear to be located inside the damper springs, not outside the springs, as recited in Claim 2. With regard to Claim 3, the elements 13 and 15, appear to be open to the environment at least through window 16 (Figure 2), not within an airtight damper, as recited in Claim 3. With regard to Claim 4, Applicants fail to find any disclosure in the Kagiyama reference, whether in the specification, drawings, or claims, that teaches or suggests a conical shape for the friction member identified with reference numeral 13. Accordingly, it is believed that the conical

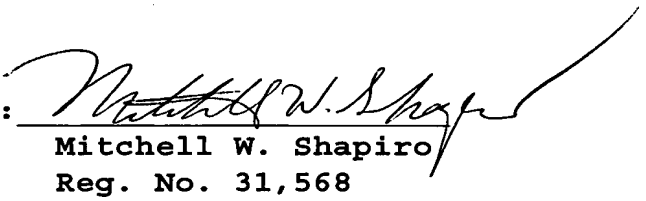
ring in Claim 4 is not taught or suggested by the disclosures of the Kagiyama reference.

Dependent Claims 2-4 thus recite features of the invention that are not disclosed or suggested in the Kagiyama reference, and are accordingly patentable over the disclosures of that reference.

In view of the above amendments and discussion, this application is believed to be in condition for allowance, and an early Notice of Allowance is respectfully requested.

The Commissioner is hereby authorized to charge to Deposit Account No. 50-1165 any fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been requested separately, such extension is hereby requested.

Respectfully requested,

By: 

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MARKED-UP COPY OF THE CLAIMS:

1. (Amended) A damper assembly with a torque limiter, said damper assembly having a single torque transmission path between an input axis and an output axis, and comprising:

a friction torque limiter between [an] said input axis or [an] said output axis and an airtight damper, said friction torque limiter being in series with said damper and limiting the torque which can be transmitted through said damper.

2. (Amended) The damper assembly with a torque limiter according to claim 1, wherein said torque limiter is attached outside [and] said airtight damper to configure a friction plate.

3. (Amended) The damper assembly with a torque limiter according to claim 1, wherein said torque limiter is provided inside [an] said airtight damper to form a friction plate.

4. (Amended) The damper assembly with a torque limiter according to claim 1, wherein said torque limiter

is provided inside [an] <u>said</u> airtight damper to form a conical ring.

DAMPER ASSEMBLY WITH TORQUE LIMITER

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a damper assembly with a torque limiter which is provided between an engine and a transmission so as to protect a damper against an excess load.

Related Background Art

A damper assembly drives a driven member from a driving member directly coupled to an engine through a torsion spring. With the configuration, the torsion spring adheres to an overload generated by a combustion of an engine. As a result, the spring is possibly fatigued or damaged. Therefore, the damper assembly has conventionally been provided with an engagement portion in a predetermined position of each member of a driving member, a driven member driven through a torsion spring, an intermediate for separating a torsion spring, etc. so that the relative rotation between the members can be limited, and the torsion spring can be successfully protected against an excess load.

Fig. 4 is a front view showing each component of a prior damper assembly 10 as appropriately exploded. Fig. 5 is a sectional view along V - V shown in Fig. 4. Fig. 6 is a front view showing the maximum state of

operation similar to Fig. 1. In the drawings, reference numeral 1 denotes a front cover; 2 denotes a rear cover; and 3 denotes a drive plate directly coupled to the output axis (shaft) of an engine. The drive plate 3 corresponds to the driving member of a damper. Reference numeral 5 denotes a retainer plate for receiving a torsion spring 80 for the drive plate 3; and 7 denotes a hub fixed to the retainer plate with a rivet 11. The combination of the retainer plate 5 and the hub 7 corresponds to the driven member.

Reference numeral 6 denotes a divider ring for dividing the torsion spring 80, and is attached around a outer periphery of the hub 7 for predetermined relative movement. Reference numeral 31 denotes a spring space of the drive plate 3; 32 denotes a shoulder portion formed in a predetermined position; 33 denotes a spring receiver; and 51 denotes a spring receiver of the retainer plate 5 for cooperation with the spring receiver 33 of the drive plate 3 to perform a pressing operation through the torsion spring 80.

The torsion spring 80 is divided by a projecting portion 61 of the divider ring 6. In the example shown in the drawings, there are three sets of torsion springs 80 between the drive plate 3 and the retainer plate 5. However, since they are divided by the divider ring 6, it is assumed that there are 6 sets of torsion springs 80 in total. In the example shown in